Use Attainability Analysis

for

WBID 1445 Little Pomme de Terre River

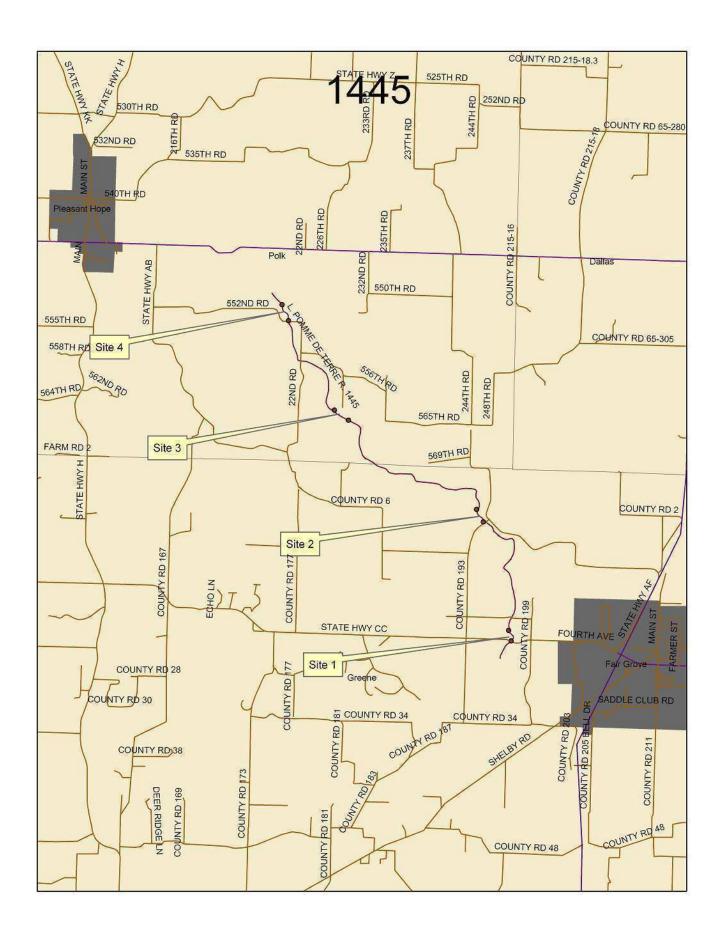
Submitted by SES, Inc.

To Missouri Department of Natural Resources Water Protection Program

Date Received: October 26, 2007

Data Sheet A - Water Body Identification

I. Water Body Information (For water body being	g surveyed)
Water Body Name (from USGS 7.5' quad):	
Little Pomme De Terre River	
Missouri Water Body Identification (WBID) Number:	
1445	
8 digit HUC code:	County:
10290107	Polk, Greene
Upstream Legal Description (from Table H):	
T31N R21W 25	
Downstream Legal Description (from Table H):	
T31N R21W 3	
Number of sites evaluated:	
4	
List all site numbers, listed consequently upstream to do	wnstream:
1,2,3,4	
Site Locations Map(s): Attach a map of the entire segn	nent with assessment sites clearly labeled.
Mark any other items that may be of interest.	
•	
II. Facility Information (list all permitted discharges to t	ne water body segment)
Facility Name(s) and Permit Number(s):	,
Acres of Shade MHP	
MO 0107646	
III. UAA Surveyor (please print legibly)	
Name of Surveyor:	Telephone Number:
Aaron Ball	(913)307-0046
Organization/Employer:	(010)001 0010
SES, Inc.	
020, mo.	
Please verify that you have completed all sections, of	hecked all applicable hoxes, and that the form is
complete.	nooned an apphousic soxes, and that the form is
oompicto.	
Signed: Aaron Ball	Date: 10/23/2007



WBID#	1445
Site #	1

Date & Time:		10/12/07	7:34	Site Location	on Descrip	tion (e.g. road	crossing):
Personnel:		Aaron Ball, Drew D	odson		St. Hwy C	C	
Current Weat	her Cond	ditions: clear		Facility Nar	me:	Acres of Sha	de MHP
Weather cond	litions fo	r the past 10 days:	0.47 inches	Permit Nun	nber:	MO 0107646	
Drought cond	itions?: I	No drought ☑ ; Pha	se I □ ; Phase	· II □ ; Phas	e III □ ; Pl	nase IV □ ; Ur	nknown 🗆
Site Location	1:						
		(Universal Transver	se Mercator Pr	rojection, In	Meters		
Site 01	Easting	ı (UTM X):	Northing (UTN	И Y):		Horizontal Ac	ccuracy: Meters
	048382	<u>'6</u>	4137928				7.5
Site 11	Easting	ı (UTM X):	Northing (UTN	М Y):		Horizontal Ac	ccuracy: Meters
	048377	 '7	4138125	<u> </u>			5.7
	,L						
Photos:	т —		T	T		T	T
Photo ID#	F	Photo Purpose	Photo ID#:	Photo Purpose		Photo ID#:	Photo Purpose
86	Upstrea	am	87	Downstrea	m		
Photo ID#	P	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose
				<u> </u>			
Photo ID#	Р	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose
Uses Observ	ed:						
☐ Swimming]	☐ Skin diving	☐ SCUBA di	iving	☐ Tubin	g	☐ Water Skiing
☐ Wind surfi	ng	☐ Kayaking	☐ Boating		□ Wadir	ng	□ Rafting
☐ Hunting		☐ Trapping	☐ Fishing		✓ None	of the above	□ Other:
Describe:							

WBID # 1445 Site # 1						
	Field Data Sheets 1	for Recreational Use	Stream	Surveys		
	Data Sheet B-	Site Characterizatio	n (Contir	nued)		
Surrounding Condition	ons:					
☐ City/County parks	☐ playgrounds	☐ MDC conservation	n lands	☐ Urban areas	☐ Rural	Residential
☐ Campgrounds	☐ State parks	□ National Forests		□ Nature trails	☐ Stairs/	walkways
☐ Boating accesses	☑ Fence	☐ No tresspass sign	า	☐ Steep Slopes	□ Other	:
Evidence of Human U	Jse:					
☐ Roads	☐ Foot path/prints	☐ Dock/platform		☐ Camping Sites	☐ Rope :	swings
☐ RV/ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharge	Э	☐ Fishing Tackle		ock watering
comments/other:	none					
Substrate:						
% Cobble 50	% Gravel 30	% Sand	% Silt	% Mud/0	Clay	% Bedrock 20
Aquatic Vegatation:	tion in challour arran					
Rooted aquatic vegeta	mon in snahow areas	·.				

Water Characteristics:

Odor:	□ Sewage	□ Musky	☐ Chemical	☑ None	☐ Other:
Color:		□Green	☐ Gray	☐ Milky	□ Other:
Bottom Deposit:	☐ Sludge	☐ Solids	☐ Fine sediments	☑ None	☐ Other:
Surface Deposit:	□ Oil	☐ Scum	□ Foam	☑None	□ Other:

Organization: SES, Inc.

Field Data Sheets for Recreational Use Stream Survey:

Data Sheet B - Site Characterization (continued

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

																		Disso	lved Ox	xygen		
	Waterbo	ody ID:	1445		-	Site #:	1			L.Pomn	ne de Ter	re River				Date:	10/12/0	7		Time:	7:35	
	Estimate	ed Chann	nel Incisi	on:	3.0	(m) (hei	ght betw	een low b	ank wid	th and wa	ater)							Oxygen:				
				UTM X)	, Northin	g (UTM	Y), Hori	izontal Ac	curacy I	Estimate	(EPE / P	DOP / FO	OM)			Δ.	3501704	onygen.		0.2	(mg/L)	
	01	UTM X	<u> </u>	0483826	5	1	UTM Y:		4137928	8		+/-	7.5	(meters)		Di	ssolved	Oxygen:			(% sat)	
	11	UTM X	<u> </u>	0483777	/		UTM Y:		413812	5	-	+/-	5.7	(meters)	•		Specit	fic Cond:			(uS/cm)	
	Average	Stream	Width:				6	(meters)	L	ength of	Survey S	Segment:		150	(meters)						•	
	(To dete	rmne Le	ngth of I	Reach)					(2	20x avera	ige strear	n width)				Wa	ter Tem	perature:		12	(°C)	
	Fiel	d Staff:				Aaron E	Ball, Drev	v Dodson														
										Tra	nsect C	ross-Se	ction									
	0	1	0	2	0	3	()4	0)5	0	6	(07	08	3	(09	1	0	1:	1
Station	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.2	0.05	0.9	0.05	1.0	0.15	0.2	0.05	0.5	0.20	0.8	0.10	0.2	0.05	1.0	0.15	0.4	0.10	1.2	0.15	0.6	0.15
2	0.4	0.05	1.8	0.05	2.0	0.20	0.4	0.05	1.0	0.35	1.6	0.40	0.4	0.05	2.0	0.20	0.8	0.10	2.4	0.00	1.2	0.25
3	0.6	0.05	2.7	0.00	3.0	0.30	0.6	0.05	1.5	0.40	2.4	0.45	0.6	0.05	3.0	0.15	1.2	0.15	3.6	0.15	1.8	0.30
4	0.8	0.05	3.6	0.00	4.0	0.25	0.8	0.10	2.0	0.40	3.2	0.60	0.8	0.05	4.0	0.20	1.6	0.10	4.8	0.30	2.4	0.35
5	1.0	0.05	4.5	0.10	5.0	0.30	1.0	0.10	2.5	0.50	4.0	0.70	1.0	0.10	5.0	0.30	2	0.10	6.0	0.20	3.0	0.35
6	1.2	0.05	5.4	0.20	6.0	0.25	1.2	0.10	3.0	0.30	4.8	0.60	1.2	0.10	6.0	0.20	2.4	0.10	7.2	0.00	3.6	0.25
7	1.4	0.05	6.3	0.25	7.0	0.30	1.4	0.05	3.5	0.30	5.6	0.55	1.4	0.05	7.0	0.30	2.8	0.05	8.4	0.20	4.2	0.20
8	1.6	0.05	7.2	0.15	8.0	0.30	1.6	0.00	4.0	0.25	6.4	0.50	1.6	0.05	8.0	0.30	3.2	0.05	9.6	0.25	4.8	0.15
9	1.8	0.05	8.1	0.15	9.0	0.30	1.8	0.05	4.5	0.10	7.2	0.40	1.8	0.05	9.0	0.20	3.6	0.05	10.8	0.25	5.4	0.10
Right Bank	2.0	0.00	9.0	0.00	10.0	0.00	2.0	0.00	5.0	0.00	8.0	0.00	2.0	0.00	10.0	0.00	4	0.00	12.0	0.00	6.0	0.00
Feature Type																						
riffle, run, or pool		ool	pc ed beginning		po			ool right descend		ool	po width is the		_	ool	po	ol	р	ool	pc	ool	po	ol
rotes:	1 I allisects W	iii oc measur	ou ocginning	OH ICH UCSC	onunig Dank (o ucpui) and	и инимпиц О1	rrigin descend	mig udlik (U	acpuij. IIIIS	widin is tile	wenca wiath										

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

0.70 MAXIMUM

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

0.15 MEDIAN

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1) All measurements to be taken to the nearest 0.01 meter.

Signed: Aaron Ball Date: 10/12/07

WBID#	1445
Site #	2

p								
Date & Time:		10/12/07	8:05	Site Location	on Descrip	tion (e.g. road	crossing):	
Personnel:		Aaron Ball, Drew D	odson		CR 193			
Current Weatl	ner Cond	ditions: clear		Facility Nar	me:	Acres of Sha	de MHP	
Weather cond	itions fo	r the past 10 days:	0.47 inches	Permit Num	nber:	MO 0107646		
Drought condi	itions?: N	No drought ☑ ; Pha	se I □ ; Phase	II □ ; Phas	e III □ ; Pl	hase IV □ ; Ur	nknown 🗆	
Site Location	1:							
		(Universal Transver	se Mercator Pr	rojection, In	Meters			
Site 01	Easting	g (UTM X):	Northing (UTN	Л Y):		Horizontal Ac	curacy:	Meters
	048330)1	4140178				7.	.2
Site 11	Easting	ı (UTM X):	Northing (UTN	<u>—</u> И Y):		Horizontal Ac	ccuracy:	Meters
	048317	<u> </u>	4140413				7.	5
	0 100		1110				<u> </u>	Ü
Photos:	1		1	1		T	т	
Photo ID#	F	Photo Purpose	Photo ID#:	Photo F	Purpose	Photo ID#:	Photo Purpose	}
88	Upstrea	am	89	Downstrear	m			
Photo ID#	P	Photo Purpose	Photo ID#	Photo Purpose		Photo ID#	Photo Purpose)
Photo ID#	P	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose	
Uses Observ	ed:							
☐ Swimming	J	☐ Skin diving	☐ SCUBA di	iving	□ Tubin	g	☐ Water Skiing	
☐ Wind surfi	ng	☐ Kayaking	☐ Boating		□ Wadir	ng	☐ Rafting	
☐ Hunting		☐ Trapping	☐ Fishing		✓ None	of the above	☐ Other:	
Describe:	-		<u> </u>	,				

WBID#	1445
Site #	2

Data Sheet B- Site Characterization (Continued)

Surrounding Condition	ons:				
☐ City/County parks	☐ playgrounds	☐ MDC conservation	n lands	☐ Urban areas	☑ Rural Residential
☐ Campgrounds	☐ State parks	□ National Forests		☐ Nature trails	☐ Stairs/walkways
☐ Boating accesses	☐ Fence	☐ No tresspass sign	1	☐ Steep Slopes	☐ Other:
Comments:					
Evidence of Human l			<u> </u>		
□ Roads	☐ Foot path/prints	☐ Dock/platform		☐ Camping Sites	☐ Rope swings
☐ RV/ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharge)	☐ Fishing Tackle	
Substrate:					
% Cobble	% Gravel	% Sand	% Silt	% Mud/0	•
	50	% Sand	% Silt	% Mud/C	Clay % Bedrock 20
% Cobble 30 Aquatic Vegatation: Less than 2% minor al	gae s:				20
% Cobble 30 Aquatic Vegatation: Less than 2% minor al Water Characteristic: Odor:	50 gae s: □ Sewage	□ Musky [□ Chemi	cal ☑ N	v 20 20 None □ Other:
% Cobble 30 Aquatic Vegatation: Less than 2% minor al Water Characteristics Odor: Color:	s: □ Sewage ☑ Clear	□ Musky □ □ Green □	□ Chemi □ Gray	cal ☑ N	None □ Other: Milky □ Other:
% Cobble 30 Aquatic Vegatation: Less than 2% minor al Water Characteristic: Odor:	50 gae s: □ Sewage	□ Musky □ □Green □ □ Solids □	□ Chemi □ Gray	cal ☑ N □ N ediments ☑ N	v 20 20 None □ Other:

Organization: SES, Inc.

Field Data Sheets for Recreational Use Stream Survey:

Data Sheet B - Site Characterization (continued

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
Comments: (Please re	cord any additional comments	here.)			
none	oora arry additional comments				
Please verify that yo complete.	ou have completed all s	sections, checke	d all applicable	boxes, and that the	e form is

																		Disso	lved Ox	rygen		
		ody ID:			1)	Site #:										Date:	10/12/0)7		Time:	8:07	
								een low b								Di	issolved	Oxygen:		8.1	(mg/L)	
	01	cation - I UTM X UTM X	:	UTM X) 0483301 0483170	l	1	UTM Y:	izontal Ac	4140178	8	•	DOP / FO +/- +/-	OM) 7.2 7.5	(meters)		Di	issolved	Oxygen:			(% sat)	
								(meters)		ength of	•				(meters)		Speci	fic Cond:			(µS/cm)	
		ermne Le						(20x avera	-	_			(,,,,,,,,	Wa	ter Tem	perature:		11.7	(°C)	
	Fiel	d Staff:				Aaron E	Ball, Drev	v Dodson														
										Tra	nsect C	ross-Se	ction									
		1		2		3		04)5		6		07	0	8		09		0	1	1
Station	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m
eft Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.5	0.05	0.5	0.05	0.5	0.10	1.1	0.25	0.7	0.15	0.8	0.15	0.7	0.10	0.7	0.10	0.7	0.10	0.6	0.25	0.6	0.20
2	1.0	0.05	1.0	0.15	1.0	0.30	2.2	0.25	1.4	0.50	1.6	0.20	1.4	0.20	1.4	0.30	1.4	0.20	1.2	0.45	1.2	0.40
3	1.5	0.05	1.5	0.10	1.5	0.40	3.3	0.30	2.1	0.70	2.4	0.10	2.1	0.20	2.1	0.20	2.1	0.10	1.8	0.45	1.8	0.60
4	2.0	0.05	2.0	0.10	2.0	0.50	4.4	0.30	2.8	0.60	3.2	0.10	2.8	0.30	2.8	0.30	2.8	0.20	2.4	0.50	2.4	0.70
5	2.5	0.05	2.5	0.00	2.5	0.50	5.5	0.40	3.5	0.60	4.0	0.20	3.5	0.30	3.5	0.25	3.5	0.20	3.0	0.45	3.0	0.60
6	3.0	0.10	3.0	0.00	3.0	0.40	6.6	0.50	4.2	0.60	4.8	0.20	4.2	0.20	4.2	0.30	4.2	0.40	3.6	0.40	3.6	0.70
7	3.5	0.10	3.5	0.05	3.5	0.30	7.7	0.50	4.9	0.60	5.6	0.25	4.9	0.20	4.9	0.30	4.9	0.40	4.2	0.40	4.2	0.65
8	4.0	0.10	4.0	0.05	4.0	0.25	8.8	0.50	5.6	0.60	6.4	0.50	5.6	0.20	5.6	0.20	5.6	0.40	4.8	0.40	4.8	0.60
9	4.5	0.05	4.5	0.05	4.5	0.20	9.9	0.50	6.3	0.35	7.2	0.40	6.3	0.15	6.3	0.15	6.3	0.30	5.4	0.40	5.4	0.55
ight Bank	5.0	0.00	5.0	0.00	5.0	0.00	11.0	0.00	7.0	0.00	8.0	0.00	7.0	0.00	7.0	0.00	7.0	0.00	6.0	0.00	6.0	0.00
eature Type ffle, run, or pool	nc	ool	no	ool	no	ool	n	ool	n	ool	no	ool	n	ool	po	ol	n	ool	ро	vol	ро	ol
ine, run, or pool	pc		,, pc	101	. pc	(0.11)	1	001	- pc	JUI	- pc		Р	001	ро	01	Р	001	ро	O1	ρυ	01

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

0.70 MAXIMUM

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

0.25 MEDIAN

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as ≥ 1) All measurements to be taken to the nearest 0.01 meter.

Signed: Aaron Ball Date: 10/12/07

WBID#	1445
Site #	3

Date & Time:		10/12/07	8:51	Site Location	on Descrip	tion (e.g. road	crossing):				
Personnel:		Aaron Ball, Drew D	odson		Farmer Access off 552nd Rd.						
Current Weat	her Cond	ditions: clear		Facility Nar	me:	Acres of Sha	de MHP				
Weather cond	litions fo	r the past 10 days:	0.47 inches	Permit Nun	nber:	MO 0107646					
Drought cond	itions?: N	No drought ☑ ; Pha	se I □ ; Phase	II □ ; Phas	e III □ ; Pl	nase IV □ ; Ur	nknown 🗆				
Site Location	1:										
Location Cool	rdinates	(Universal Transver	se Mercator Pi	rojection, In	Meters						
Site 01	Easting	ı (UTM X):	Northing (UTN	И Y):		Horizontal Ad	ccuracy: Meters				
	048074	.8	4142101				5.7				
Site 11	Easting	ı (UTM X):	Northing (UTN	И <u>Y</u>):		Horizontal Ac	ccuracy: Meters				
	048047	 '9	4142291	_			5.7				
Photos:	т		T	T		T	I				
Photo ID#	F	Photo Purpose	Photo ID#:	Photo F	Purpose	Photo ID#:	Photo Purpose				
90	Downst	tream	91	Upstream							
Photo ID#	Р	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose				
Photo ID#	Р	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose				
				<u> </u>							
Uses Observ	ed:										
☐ Swimming	J	☐ Skin diving	☐ SCUBA di	iving	☐ Tubin	g	□ Water Skiing				
☐ Wind surfi	ng	□ Kayaking	☐ Boating		□ Wadir	ng	□ Rafting				
☐ Hunting		☐ Trapping	☐ Fishing		✓ None	of the above	□ Other:				
Describe:											

WBID#	1445
Site #	3

Data Sheet B- Site Characterization (Continued)

Surrounding Condition	ons:				
☐ City/County parks	☐ playgrounds	☐ MDC conservatio	n lands	☐ Urban areas	☑ Rural Residential
☐ Campgrounds	☐ State parks	☐ National Forests		☐ Nature trails	☐ Stairs/walkways
☐ Boating accesses	☐ Fence	☐ No tresspass sign	1	☐ Steep Slopes	☐ Other:
Comments:					
Evidence of Human U					
☑ Roads	☐ Foot path/prints	☐ Dock/platform		☐ Camping Sites	☐ Rope swings
☐ RV/ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharge)	☐ Fishing Tackle	
Substrate:					
% Cobble	% Gravel	% Sand	% Silt	0/ Mud/	Clav % Bedrock
% Cobble 30	% Graver 20	% Sand	% SIII	% Mud/0	50 % Bedrock
Aquatic Vegatation:					
Rooted aquatic vegeta	tion in shallow areas	;			
Water Characteristics					
Odor:	☐ Sewage		☐ Chem		None 🗆 Other:
Color:	☑ Clear		□ Gray		Milky ☐ Other:
Bottom Deposit:	□ Sludge				None Other:
Surface Deposit:	□ Oil	☐ Scum	□ Foam	✓N	lone ☐ Other:
	<u> </u>				

Organization: SES, Inc.

Field Data Sheets for Recreational Use Stream Survey:

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

	Distance from	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
	access location (m)				
			1		
omments: (Please re	cord any additional comments	here.)			
ne	j	,			
110					
ease verify that w	ou have completed all s	actions chack	ad all applicable	hoves and that the	form is
	ou have completed all s	ections, check	ed all applicable	boxes, and that the	form is
	ou have completed all s	ections, check	ed all applicable	boxes, and that the	form is
	ou have completed all s	ections, check	ed all applicable	boxes, and that the	form is
omplete.		ections, check			form is
lease verify that your properties.		ections, check		boxes, and that the 10/12/2007	form i:

																		Disso	lved Ox	ygen		
	Waterbo	dy ID:	1445			Site #:	3									Date:	10/12/0	7		Time:	8:50	
	Estimate	ed Chann	el Incisio	on:	2.0	(m) (hei	ght betw	een low b	ank widt	h and wa	iter)					D	issolved	Oxygen:		6.6	(mg/L)	
		cation - I UTM X:		UTM X) 0480748		-	Y), Hor UTM Y:	izontal Ac	curacy E 414210		(EPE / P	DOP / FO	OM) 5.7	(meters)				Oxygen:			(% sat)	
		UTM X:		0480479		. 1	UTM Y:					+/-	5.7	(meters)				ic Cond:				
							7	(meters)		-	-	Segment:		150	(meters)	***		•				
	(To determne Length of Reach) (20x average stream width) Field Staff: Aaron Ball, Drew Dodson												Wa	iter Tem	perature:		13.3	(°C)				
					l		l			Tra	nsect C	ross-Se	ction				l					
	0 Distance	1	0 Distance	2	Distance	3	Distance	04	Distance	5	Distance	6	Distance	07	0	8	Distance)9	1 Distance	0	Distance	1
Station	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	Distance (m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.6	0.20	1.1	0.25	0.9	0.10	0.9	0.10	0.6	0.25	0.6	0.35	0.8	0.30	0.8	0.15	0.8	0.20	1.0	0.20	0.8	0.30
2	1.2	0.15	2.2	0.40	1.8	0.20	1.8	0.30	1.2	0.40	1.2	0.30	1.6	0.40	1.6	0.25	1.6	0.40	2.0	0.25	1.6	0.40
3	1.8	0.30	3.3	0.45	2.7	0.20	2.7	0.40	1.8	0.30	1.8	0.20	2.4	0.55	2.4	0.30	2.4	0.40	3.0	0.35	2.4	0.40
4	2.4	0.30	4.4	0.50	3.6	0.15	3.6	0.40	2.4	0.40	2.4	0.55	3.2	0.50	3.2	0.40	3.2	0.30	4.0	0.40	3.2	0.45
5	3.0	0.30	5.5	0.50	4.5	0.20	4.5	0.40	3.0	0.50	3.0	0.50	4.0	0.70	4.0	0.40	4	0.30	5.0	0.50	4.0	0.40
6	3.6	0.20	6.6	0.50	5.4	0.20	5.4	0.50	3.6	0.40	3.6	0.60	4.8	0.70	4.8	0.45	4.8	0.30	6.0	0.45	4.8	0.30
7	4.2	0.20	7.7	0.40	6.3	0.25	6.3	0.50	4.2	0.40	4.2	0.40	5.6	0.60	5.6	0.50	5.6	0.30	7.0	0.20	5.6	0.30
8	4.8	0.10	8.8	0.20	7.2	0.20	7.2	0.40	4.8	0.30	4.8	0.40	6.4	0.30	6.4	0.40	6.4	0.30	8.0	0.20	6.4	0.20
9	5.4	0.10	9.9	0.15	8.1	0.20	8.1	0.30	5.4	0.20	5.4	0.20	7.2	0.20	7.2	0.40	7.2	0.25	9.0	0.20	7.2	0.30
aight Bank	6.0	0.00	11.0	0.00	9.0	0.00	9.0	0.00	6.0	0.00	6.0	0.00	8.0	0.00	8.0	0.00	8	0.00	10.0	0.00	8.0	0.00
eature Type	ро	ool	рс	ool	nc	ool	pe	ool	no	ool	no	ool	n _e	ool	ро	ol	po	ool	ро	ol	po	ol
Notore	Transports wi	II bo moosur	ad baginning	1-A J	anding bonk	(O donth) on		a right dagaand	ling bonk (0	donth) This	neidth is the	wattad width	г						۲.		1, -	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted wid

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

0.70 MAXIMUM

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

0.30 MEDIAN

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as ≥ 1) All measurements to be taken to the nearest 0.01 meter.

Signed:	Aaron Ball	Date:	10/12/07	

WBID#	1445
Site #	4

,											
Date & Time:		10/12/07	9:20	Site Location	on Descrip	tion (e.g. road	crossing):				
Personnel:		Aaron Ball, Drew D	odson		552nd Rd.						
Current Weath	ner Cond	ditions: clear		Facility Nar	me:	Acres of Shade MHP					
Weather cond	itions fo	r the past 10 days:	0.47 inches	Permit Num	nber:	MO 0107646					
Drought condi	itions?: N	No drought ☑ ; Pha	se I □ ; Phase	II □ ; Phas	e III □ ; Pl	hase IV □ ; Ur	nknown 🗆				
Site Location	1:										
		(Universal Transver	se Mercator Pr	rojection, In	Meters						
Site 01	Easting	g (UTM X):	Northing (UTN	Л Y):		Horizontal Ac	curacy: Me	ters			
	047961	1	4143984				7.8				
Site 11	Easting	g (UTM X):	Northing (UTN	И Y):		Horizontal Ac	curacy: Me	ters			
	047949		4144287			4.5					
	0110.0	<u>, , , , , , , , , , , , , , , , , , , </u>	111123.								
Photos:	1		1	1		T	т				
Photo ID#	F	Photo Purpose	Photo ID#:	Photo F	Purpose	Photo ID#:	Photo Purpose				
92	Upstrea	am	93	Downstrear	m						
Photo ID#	Р	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose				
Photo ID#	P	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpose				
Uses Observ	e <u>d:</u>										
☐ Swimming	J	☐ Skin diving	☐ SCUBA di	iving	☐ Tubin	g	☐ Water Skiing				
☐ Wind surfi	ng	☐ Kayaking	☐ Boating		□ Wadir	ng	☐ Rafting				
☐ Hunting		☐ Trapping	☐ Fishing		☑ None	of the above	☐ Other:				
Describe:		11 0	<u> </u>								

WBID#	1445
Site #	4

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions: □ City/County parks □ playgrounds □ MDC conservation lands □ Urban areas □ Rural Resident □ Campgrounds □ State parks □ National Forests □ Nature trails □ Stairs/walkway □ Boating accesses □ Fence □ No tresspass sign □ Steep Slopes □ Other: Comments: none Evidence of Human Use: □ Roads □ Foot path/prints □ Dock/platform □ Camping Sites □ Rope swings □ RV/ATV Tracks □ Fire pit/ring □ NPDES Discharge □ Fishing Tackle □ Livestock wate comments/other:
□ City/County parks □ playgrounds □ MDC conservation lands □ Urban areas □ Rural Resident □ Campgrounds □ State parks □ National Forests □ Nature trails □ Stairs/walkway □ Boating accesses □ Fence □ No tresspass sign □ Steep Slopes □ Other: Comments: none Evidence of Human Use: □ Roads □ Foot path/prints □ Dock/platform □ Camping Sites □ Rope swings □ RV/ATV Tracks □ Fire pit/ring □ NPDES Discharge □ Fishing Tackle □ Livestock wate comments/other:
□ Campgrounds □ State parks □ National Forests □ Nature trails □ Stairs/walkway □ Boating accesses □ Fence □ No tresspass sign □ Steep Slopes □ Other: Comments: none Evidence of Human Use: ☑ Roads □ Foot path/prints □ Dock/platform □ Camping Sites □ Rope swings □ RV/ATV Tracks □ Fire pit/ring □ NPDES Discharge □ Fishing Tackle □ Livestock wate comments/other:
Evidence of Human Use: ☐ Roads ☐ Foot path/prints ☐ Dock/platform ☐ Camping Sites ☐ Rope swings ☐ RV/ATV Tracks ☐ Fire pit/ring ☐ NPDES Discharge ☐ Fishing Tackle ☐ Livestock wate comments/other:
Evidence of Human Use: ☑ Roads ☐ Foot path/prints ☐ Dock/platform ☐ Camping Sites ☐ Rope swings ☐ RV/ATV Tracks ☐ Fire pit/ring ☐ NPDES Discharge ☐ Fishing Tackle ☐ Livestock wate comments/other:
☑ Roads ☐ Foot path/prints ☐ Dock/platform ☐ Camping Sites ☐ Rope swings ☐ RV/ATV Tracks ☐ Fire pit/ring ☐ NPDES Discharge ☐ Fishing Tackle ☐ Livestock water comments/other:
□ RV/ATV Tracks □ Fire pit/ring □ NPDES Discharge □ Fishing Tackle □ Livestock water comments/other:
comments/other:
Substrate:
% Cobble % Gravel % Sand % Silt % Mud/Clay % Bedr
20 70 10
Aquatic Vegatation: none
Water Characteristics:
Odor: Sewage Musky Chemical None Othe
\square Color: \square Cloor \square Croop \square Crov \square Mills \square Other
Color: □ Clear □ Green □ Gray □ Milky ☑ Other Bottom Deposit: □ Sludge □ Solids □ Fine sediments ☑ None □ Other

Organization: SES, Inc.

Field Data Sheets for Recreational Use Stream Survey:

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

	Distance from	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
	access location (m)				
			1		
omments: (Please re	cord any additional comments	here.)			
ne					
110					
ease verify that yo	ou have completed all s	ections, check	ed all applicable	boxes, and that the	form is
	ou have completed all s	ections, check	ed all applicable	boxes, and that the	form is
	ou have completed all s	ections, check	ed all applicable	boxes, and that the	form is
	ou have completed all s	ections, check	ed all applicable	boxes, and that the	form is
ease verify that your properties.		ections, check		boxes, and that the	form is

																		Disso	lved Ox	ygen		
	Waterbo	ody ID:	1445			Site #:	4									Date:				Time:		
	Estimate	ed Chann	nel Incisi	on·	2.0	(m) (hei	oht hetw	een low b	ank widt	h and wa	nter)								D.O. m			
	Limax	oa Chain	ici ilicisi	011.	2.0	(III) (IICI	gnt octw	cen low b	ank wia	in and we	iter)					Dissolved Oxygen: not working (mg/L)						
	GPS I o	cation - I	Facting (IITM X)	Northir	og (HTM	V) Hor	izontal Ac	curacy F	Sctimate	(EPE / PI	DOP / FO	OM)				15501104	Oxygen.	not worr	ung	(mg/L)	
		UTM X	•	0479611		•	UTM Y:		414398		•	+/- +/-	7.8	(meters)		D	issolved	Oxygen:			(% sat)	
	11	UTM X	:	0479491	1	. 1	UTM Y:		414428	7	•	+/-	4.5	(meters)			g :(~			(G/)	
	Average	Stream	Width:				6	(meters)	L	ength of	Survey S	Segment:		150	(meters)		Specif	ic Cond:			(μS/cm)	
			ngth of F							20x avera	•	•				Wa	iter Tem	perature:			(°C)	
	Fiel	d Staff:				Aaron E	Ball, Drev	v Dodson														
										T												
			ı				ı			Tra	nsect C	ross-Se	ction				Г					
	0	01 02 03		3	04		05		06		07		0	8 09		10		11				
Station	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.5	0.10	0.8	0.05	0.3	0.05	0.3	0.05	0.8	0.20	0.7	0.30	0.4	0.05	0.6	0.15	0.7	0.05	0.3	0.10	0.8	0.40
2	1.0	0.20	1.6	0.00	0.6	0.10	0.6	0.05	1.6	0.30	1.4	0.30	0.8	0.20	1.2	0.30	1.4	0.20	0.6	0.15	1.6	0.40
3	1.5	0.30	2.4	0.00	0.9	0.10	0.9	0.05	2.4	0.35	2.1	0.10	1.2	0.40	1.8	0.40	2.1	0.30	0.9	0.30	2.4	0.55
4	2.0	0.30	3.2	0.05	1.2	0.15	1.2	0.05	3.2	0.50	2.8	0.00	1.6	0.40	2.4	0.50	2.8	0.25	1.2	0.30	3.2	0.60
5	2.5	0.30	4.0	0.05	1.5	0.10	1.5	0.10	4.0	0.60	3.5	0.10	2.0	0.40	3.0	0.50	3.5	0.30	1.5	0.30	4.0	0.40
6	3.0	0.30	4.8	0.05	1.8	0.05	1.8	0.10	4.8	0.60	4.2	0.20	2.4	0.40	3.6	0.50	4.2	0.30	1.8	0.20	4.8	0.30
7	3.5	0.25	5.6	0.05	2.1	0.10	2.1	0.10	5.6	0.60	4.9	0.20	2.8	0.40	4.2	0.60	4.9	0.50	2.1	0.20	5.6	0.25
8	4.0	0.20	6.4	0.10	2.4	0.10	2.4	0.05	6.4	1.00	5.6	0.15	3.2	0.30	4.8	0.60	5.6	0.60	2.4	0.10	6.4	0.10
9	4.5	0.20	7.2	0.05	2.7	0.05	2.7	0.05	7.2	1.00	6.3	0.10	3.6	0.15	5.4	0.50	6.3	0.35	2.7	0.05	7.2	0.05
ight Bank	5.0	0.00	8.0	0.00	3.0	0.00	3.0	0.00	8.0	0.00	7.0	0.00	4.0	0.00	6.0	0.00	7	0.00	3.0	0.00	8.0	0.00
eature Type																						
iffle, run, or pool	pc	ool	pc	ool		ool		ffle		ool		ool	p	ool	po	ol	po	ool	po	ol	po	ol
Noton	Transacte III	ill be meesur	ad baginning	on laft daga	anding bonk	(O donth) on	d finishing or	a right dagaand	ling bonle (0	donth) Thic	width in the	wattad width										

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted wid

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

1.00 MAXIMUM

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

0.20 MEDIAN

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed:	Aaron Ball	Date:	10/12/07	
		-		П

WBID# 1445



Site# 1 Photo ID# 86, Upstream



Site# 2 Photo ID# 88, Upstream



Site# 1 Photo ID# 87, Downstream



Site# 2 Photo ID# 89, Downstream

WBID# 1445



Site# 3 Photo ID# 90, Downstream



Site# 4 Photo ID# 92, Upstream



Site# 3 Photo ID# 91, Upstream



Site# 4 Photo ID# 93, Downstream